

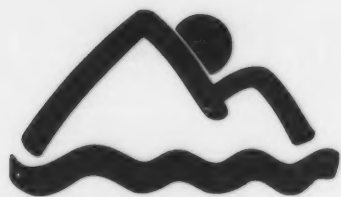
Program for Participation

How B.C. Is Managing Solid Waste



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Program for Participation

How B.C. Is Managing Solid Waste

**Municipal Solid and
Biomedical Waste Branch
Environmental Protection Division
B.C. Environment
August 1991**



Printed on recycled paper



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I. INTRODUCTION – GARBAGE IS A WASTE!

Garbage. Most of what we throw away is actually a valuable resource, yet British Columbia disposes of about 2.4 million tonnes of municipal solid and biomedical waste every year – almost 2.2 kilograms of waste per day for every person in the province – even though more than half of it can be reused, recycled, or recovered. This rate, typical of all Canadians, makes us the most wasteful people on earth, as shown in the comparison of waste generation rates in Figure 1 below.

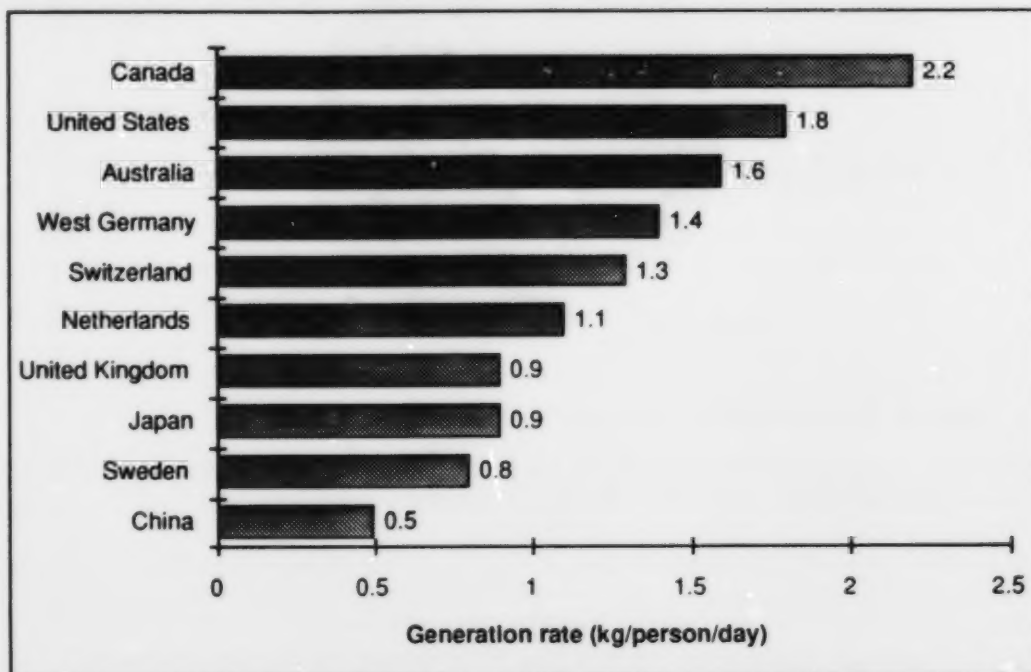


Figure 1: Comparison of solid waste generation rates (kg/person/day).

In the past, most of this waste has been wrongly considered “useless” and has gone to one of British Columbia’s 236 existing landfill sites. This practice has wasted our resources and our money. Landfills waste land which might otherwise be suitable for agriculture, housing or recreation. Without proper design and operation, landfills can leach hazardous materials into the groundwater and surface waters, potentially endangering the environment and human health.

British Columbia’s waste management problems are most acute in the Lower Mainland. One half of British Columbia’s population is cramped into a very small area between the mountains and the sea. The Greater Vancouver area’s rapidly increasing population and high rain fall are putting stress on its safe landfill capacity. Unless the per capita waste generation rate is reduced, there will be a shortage of permitted disposal facilities. Waste management costs will also escalate dramatically. The problems now facing Greater Vancouver will be the reality for the rest of British Columbia, unless the entire province changes its habits.

Our past heavy reliance on landfilling for solid waste management means that landfills are rapidly being filled to capacity. Approximately 60% of our landfill sites will be filled to capacity by the year 2000. Because only 2% of B.C.’s land is suitable for use as landfill sites, new sites are hard to find. The competition for land use is intense and, of course, no one wants a landfill site in their back yard.

Residential waste makes up approximately 45% of the municipal waste stream in British Columbia. The other 55% comes from industrial, commercial, and institutional sources. The estimated composition of the municipal waste stream is shown in Figure 2 below.

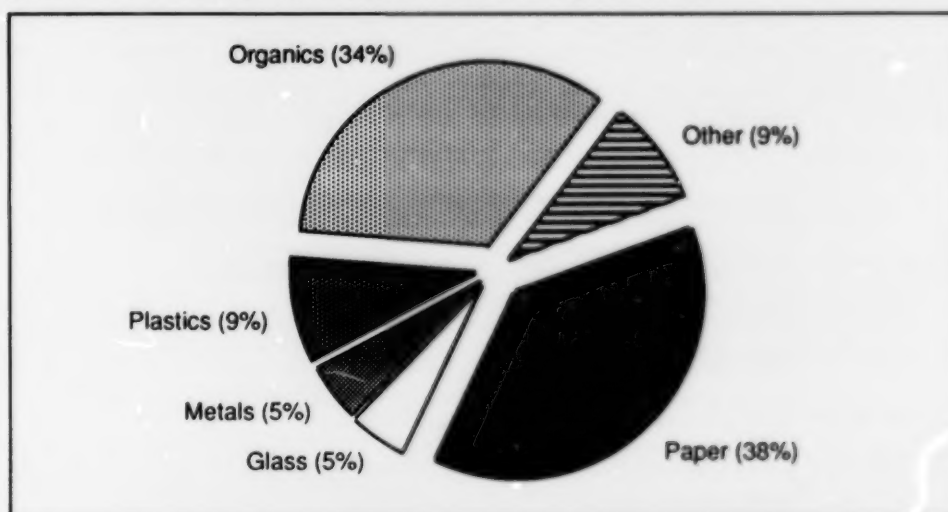


Figure 2: Municipal solid waste stream composition

Incineration is a possible disposal option, but requires sophisticated emission controls and may produce potentially toxic residual ash which has its own disposal problems.

Incineration is currently our primary method of disposing of biomedical wastes. These wastes are just a small part of our garbage glut, but they can cause injury, spread disease, and have toxic impacts if improperly handled. Right now, most of the 5,800 tonnes of biomedical wastes produced each year are burned at hospital incinerators. None of these 68 incinerators has any emission control equipment or meets the proposed provincial standards for biomedical waste incinerators. This is unacceptable.

As the population, urban densities and economic activities increase, these serious problems will only worsen unless we are prepared to change. Alternative ways of thinking about waste must be found.

II. AMBITIOUS GOALS FOR A SUSTAINABLE FUTURE

The Government of British Columbia believes that the province's municipal solid and biomedical waste problems must be corrected as quickly and as comprehensively as possible. Our goals are ambitious but attainable:

- To reduce all municipal solid waste by 50% on a per capita basis by the year 2000, with an interim goal of a 30% reduction by 1995 (as measured against the amount in 1990);
- To develop environmentally responsible disposal systems for wastes that cannot be reduced, reused, recycled or recovered; and
- To develop a provincial solution for collecting, treating and disposing of biomedical wastes.

These goals have been established after a thorough process of public consultation, research and planning. They are based on the recommendations of the Municipal Solid Waste Management Task Force and the Task Force on Biomedical Waste.

III. COMMITMENT TO THE FUTURE

A. The Municipal Solid Waste Management Strategy

In September, 1989, the Government announced the five-year, \$150 million Municipal Solid Waste Management Strategy at the annual meeting of the Union of British Columbia Municipalities.

This strategy is based on a five-part framework which includes:

- **Funding** to support all aspects of municipal solid waste management;
- **Market research and development** to encourage the creation and purchase of products that reduce waste;
- **Public Information and Education** programs;
- **Partnership building** between the public, industry and all levels of government; and
- **Polluter-pay policies** which will ensure that those who create waste, rather than the government and general public, will bear the ultimate responsibility for the costs of solid waste management.

Funding for the Strategy comes from the Sustainable Environment Fund (SEF), which pools together funds from the Provincial Government, voluntary contributions from the public and industry, "green-taxes and levies", and fines collected for environmental offences. The SEF monies are dedicated solely to environmental initiatives.

B. Managing Waste Is A Matter Of Priority - The 3 "R's"

Successful solid waste management must be province-wide and comprehensive. To this end, British Columbia has adopted the Three "R's" of Waste Management. The Three "R's" are arranged in a descending order of priority:

- ***Reduce***

Buying less is a personal choice we all need to make because this is the most effective method of reducing our solid waste. Beginning in the home and at the office, we need to promote conservation measures that use fewer products and less packaging.

- ***Reuse***

Many materials and containers can be reused just as they are without remanufacturing them. We need to reject the convenience of quick disposal and choose to reuse and repair to make things last longer.

- ***Recycle***

Many waste materials can be collected and used to manufacture new products. The public can recycle materials such as paper, glass, metals and plastic by separating out these useful materials prior to collection and by participating in recycling programs sponsored by governments, businesses and community groups. Purchase of products made with recycled materials is consistent with practice of the "3 R's".

In addition to the traditional Three "R's" of Waste Management, we recognize two further "R's":

- ***Recover***

After collection, useful materials, and even energy, can be extracted from the waste stream to maximize the benefits the waste reduction programs.

- ***Residue Management***

Ultimately, some materials will no longer be reusable or recyclable. These final waste materials must be disposed of in the safest and most efficient manner possible under the highest standards of environmental protection.

C. Closing The Loop

"Closing the Loop" has been defined as the key to a successful market development plan. This strategy recognizes that a demand must be created for recycled materials if waste reduction is to be sustainable and economically viable. Figure 3 on the following page shows this recycling loop and illustrates the need to increase both the supply of and demand for recycled materials.

- Generating new ideas and ways to reduce, reuse, and recycle; and
- Assisting in your community's public consultation efforts aimed at evaluating and planning solid waste management alternatives and solutions.

2. Industry and Business

The private sector is encouraged to participate in finding solutions to solid waste management problems by:

- Reducing waste at source through better stewardship of resources;
- Taking an "Ownership and Stewardship" approach to the waste generated by consumer use of its products;
- Designing products and packaging which can be reused and recycled;
- Initiating and participating in reuse programs such as deposit/refund systems;
- Using post-consumer recyclable materials in the production of new products;
- Making voluntary contributions to help fund community collection and recycling programs and facilities;
- Participating in industrial waste exchanges; and
- Developing purchasing policies which favour the purchase of materials with recycled contents.

3. Local Governments

All 29 Regional Districts throughout British Columbia are at work developing long-term solid waste management plans. The plans are to be completed by the end of 1995, and will:

- Identify the size and composition of their solid waste stream;
- Set out the financial and legislative prerequisites and the methods and timetable for achieving the 50 % waste reduction goal; and
- Outline the mechanisms for review and evaluation of the plan.

Local governments may also:

- Develop purchasing policies which favour the purchase of materials with recycled content;
- Implement recycling and composting programs;
- Apply to a variety of financial assistance programs to help initiate current waste management strategies;

- Conduct campaigns to inform the public on waste reduction techniques and litter control and prevention; and
- Upgrade solid waste management practices in rural areas.

4. The Provincial Government

The Government of British Columbia is taking a proactive stance in addressing our solid waste management problems. Through its comprehensive, province-wide, Municipal Solid Waste Management Strategy, the Provincial Government is:

- Setting an example through aggressive procurement policies and waste reduction measures;
- Establishing and enforcing highest standards of solid waste management;
- Developing and implementing a wide range of solid waste management strategies and programs which promote realistic alternatives to landfill use;
- Providing extensive funding for solid waste management initiatives;
- Conducting public education programs which inform the public about solid waste management issues and educate people about their role in minimizing waste;
- Providing financial and regulatory incentives and assistance for developing new solid waste management technologies; and
- Assisting in the development of markets for recyclable materials to ensure sustainable solid waste reduction.

The Provincial Governments' responsibilities are being managed by the Municipal Solid and Biomedical Waste Branch of B.C. Environment. The branch was established in October 1989 to develop and implement the Municipal Solid Waste Management Strategy. This Branch coordinates the various efforts of the public, industry and local governments as they work together toward the provincial goal of 50% waste reduction by the year 2000. Supplying technical resources and information, is part of the Branch's pro-active mandate to work in full partnership with the public, local governments and private sectors to reduce solid waste. The Branch also has the legislative and monitoring authority to ensure compliance with its programs if necessary.

The Branch is composed of the Reduction, Recycling and Treatment Section, and the Marketing and Enterprise Development Section. At present, the Municipal Solid and Biomedical Waste Branch employs 15 full-time staff in Victoria who work closely with Environmental Protection staff at the six B.C. Regional Offices in the development and implementation of the Municipal Solid Waste Management Strategy. The Branch organization is illustrated in Figure 5 on the following page.

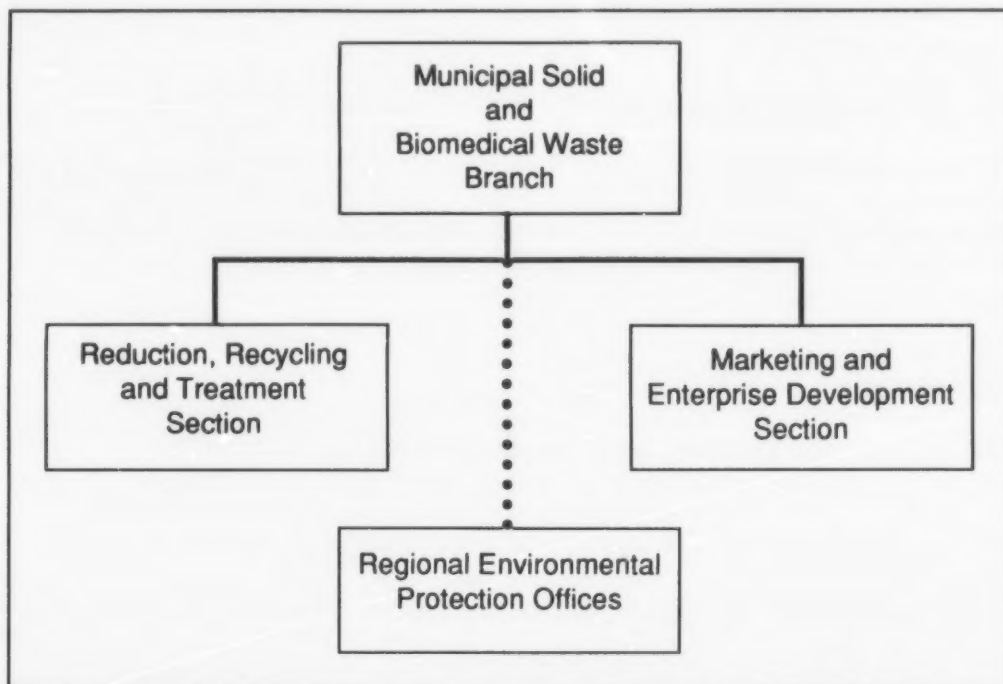


Figure 5: Organization of the Municipal Solid and Biomedical Waste Branch.

5. Provincial-Federal Government Initiatives

a) The National Packaging Task Force

Funding has been allotted to a nationally coordinated data collection program on packaging, in accordance with the National Packaging Protocol of the Canadian Council of Ministers of the Environment. This is part of the joint federal/provincial initiative to reduce the amount of disposable consumer packaging by 50% by the year 2000.

b) The Environmental Partners Fund

The Environmental Partners Fund is a Federal program designed to provide financial assistance for projects that will protect, enhance and restore the environment. The province acts in conjunction with the Federal Government in reviewing applications to this program for technical merit, excellence and degree of partnership.

B. Partnerships Between Business, Governments, Industry and Public Interest Groups – the Partners in Recycling Program

- A Partners in Recycling Program, illustrated in Figure 6 on the following page, is being established to combine the Government's financial commitment to solid waste reduction with industry's responsibility for the waste their products generate. The partnership is intended to facilitate industry in taking a co-operative role in development of the recycling infrastructure.

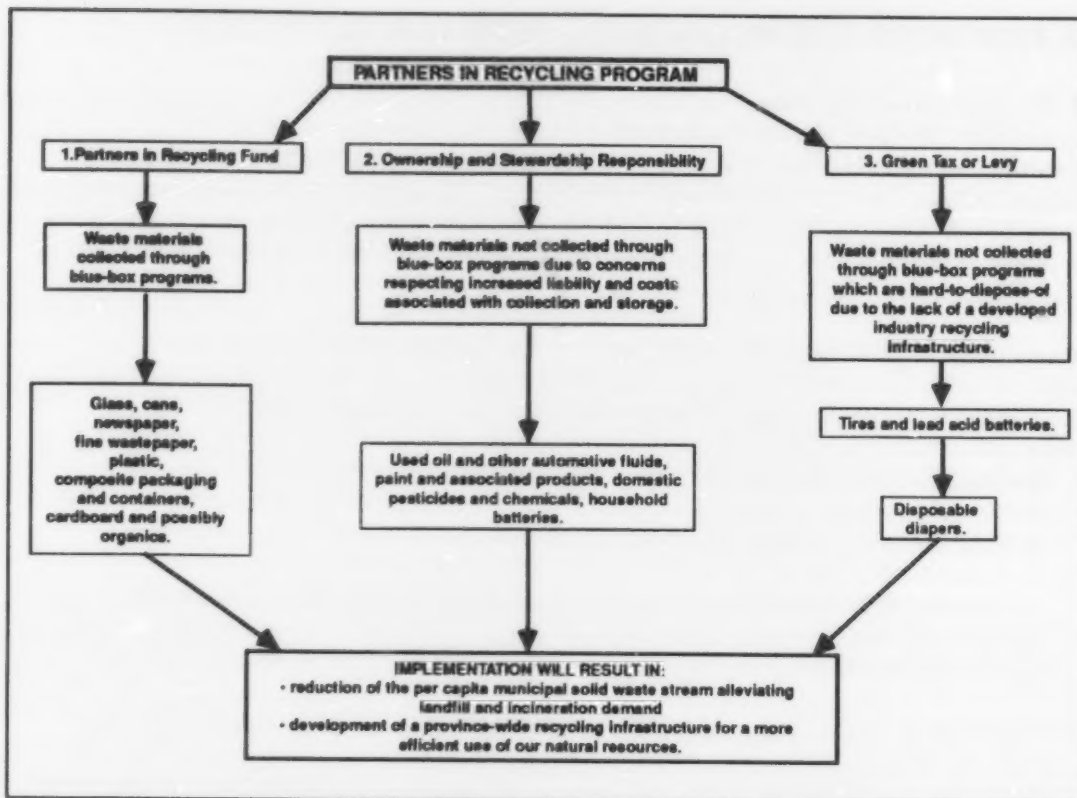


Figure 6: Partners in Recycling Program.

This program will consist of initiatives aimed at three different types of recyclable wastes:

- A) The "Partners in Recycling Fund" for waste collected through blue box programs will include voluntary contributions from industries that produce wastes that are collected in blue boxes. The purpose of the fund is to ensure that industry contributes to the operating costs of blue box programs.
- B) The "Ownership and Stewardship" approach for wastes that are not being collected through blue box programs due to concerns with increased liability and costs associated with its collection and storage. This approach to solid waste management is intended to encourage industries and retailers whose products generate these wastes to assume responsibility for all costs associated with their collection and recycling.
- C) The "Green Tax and Levy" for wastes that are not being collected through blue box programs due to the lack of a developed recycling industry and are therefore considered hard-to-dispose-of. The Government would prefer that industry take a voluntary approach to developing recycling solutions. However, where an industry does not take such a voluntary initiative, the Government will consider appropriate regulatory measures. To date, levies have been applied to tires and lead-acid batteries, while the tax exemption has been removed from disposable diapers.

V. PROGRESS IS ALREADY BEING MADE FOR THE FUTURE

A. Responsibilities/Objectives

Environment 2001, Strategic Directions for British Columbia, released by B.C. Environment in August 1991, outlines B.C. Environment's commitment to address the environmental challenges facing British Columbia. The sections entitled Municipal Solid Waste and Biomedical Waste, clearly detail the responsibilities of, and specific objectives to be met by, the Municipal Solid and Biomedical Waste Branch (the "MSBW Branch").

Environment 2001, Strategic Directions and Actions state ministry objectives for implementation by the MSBW Branch and are noted below in italics. Following each objective is a detailed description of the related MSBW programs and initiatives which address the objective.

I. Environment 2001, Strategic Directions and Actions

a) Major Reduction in Municipal Solid Waste

The Ministry is committed to reaching the Municipal Solid Waste Management strategy objective of a 30% per capita reduction in municipal solid waste going to landfills by 1995, and a 50% reduction by the year 2000.

MSBW programs aimed at achieving this reduction objective include the following initiatives:

- (i) **Funding** for local governments and non-profit groups through the Municipal Solid Waste Management Financial Assistance Programs to support all aspects of municipal solid waste management.

Over \$4 million has been committed to date under the Municipal Solid Waste Financial Assistance Programs, to help plan and implement solid waste management initiatives throughout the province. These programs are described briefly below:

- **The Solid Waste Management Planning Financial Assistance Program (SWMPFAP)** is available to assist Regional Districts in preparing solid waste management plans. These plans must be compatible with the government strategy to reduce, reuse and recycle, and to the Ministry of Environment's goal of a 50% percent per capita reduction in solid waste by the year 2000.
- **The Multi-Material Recycling Financial Assistance Program (MMRFAP)** is available for capital costs associated with the implementation of recycling initiatives. Eligible initiatives include but are not restricted to material collection programs, recycling depots and composting programs.
- **The Rural Waste Management Financial Assistance Program (RWMFAP)** is available to Regional Districts to upgrade solid waste management practices in rural areas.
- **The Recyclable Goods Transportation Financial Assistance Program (RGTFAP)** is available for recycling initiatives which incur significantly higher costs in transporting recyclable goods to market due to their location.

- **The Litter Control Financial Assistance Program (LCFAP)** is available to encourage and assist local groups in creating litter control and prevention programs.
- **The Public Information and Education Financial Assistance Program (PEIFAP)** is available to eligible applicants for province-wide public education programs which promote the municipal solid waste strategy.

(ii) **Public Information and Education Programs** to increase public awareness of the "3 R" concept and to raise the level of demand for products made from recycled materials.

- **The MSBW Eco-Education Program**

The MSBW Branch has developed an "Eco-Education" program focusing on garbage reduction, to be delivered to all elementary schools during the autumn of 1991. This school curriculum supplement consists of an award winning video starring "Eco the Ecosaurus", interactive computer game disks, and Teachers' Activity Resource Material, all included in an easy to use binder. The package was prepared by a leading environmental educator in consultation with a twenty-person review team consisting of Ministry of Education representatives, waste management experts, students, teachers and parents.

- **The B.C. Recycling Hotline**

A province-wide "B.C. Recycling Hotline" was established in June, 1990 to provide the public with quick and easy access to information on where and how to reduce, reuse and recycle, as well as general information on provincial solid waste management initiatives. The Hotline can be reached at 1-800-667-4321, or at 732-9253 (R-E-C-Y-C-L-E) for Greater Vancouver residents. The Hotline is staffed from 9:00 am to 5:00 pm Monday through Saturday and provides a computerized recording for after-hours calls. The number of calls to the Hotline has increased steadily since its inception and it currently is receiving over 1,000 calls per week.

- **Greening of the Workplace**

Program information on the "Greening" of provincial government workplaces, is being developed. This package will include information on office waste paper and other resource recovery programmes.

b) Target Reductions for Tires, Oil and Batteries by the Year 2000

More stringent waste reduction targets will be established for certain kinds of waste that are particularly good for recycling or recovery, such as tires, oil, and batteries. Reductions will be aimed at generators, distributors and consumers of waste-creating products.

Programs for managing waste tires and batteries have been developed based on working partnerships with stakeholders. These programs have been designed to develop markets for the recycled materials. Since June of 1990 the "green levies" collected on the sale of new tires and batteries have gone towards these comprehensive initiatives designed to recycle over 90% of the 2,000,000 used tires and 800,000 used batteries which enter our waste stream each year. The programs were launched in June of 1991.

c) Environmental Industries Strategy

In collaboration with the Ministry of Development, Trade and Tourism, B.C. Environment will develop an environmental recycling and waste reduction industries program. The goal is to promote the creation and application of innovative waste reduction technologies by B.C. industries.

d) Packaging Protocol

The ministry will be implementing the National Packaging Protocol, in concert with the federal government and other provincial ministries. It will thereby reduce the amount of packaging sent for disposal in B.C. (as measured against the amount in 1988) by: 20 percent by the end of 1992; 35 percent by the end of 1996; and 50 percent by the end of 2000.

Funding has been allotted by the MSBW Branch to a nationally coordinated data collection program on packaging, in accordance with the National Packaging Protocol of the Canadian Council of Ministers of the Environment.

e) Waste Reduction Legislation

The ministry will legislate the new waste reduction measures needed to create, provide incentives for and effectively implement programs and policies on waste reduction and recycling — where voluntary partnerships between industry and government fail to attain waste reduction targets. This initiative will be part of the overall review of environmental protection legislation and will be the subject of a detailed discussion paper.

f) Beverage Container Strategy

In consultation with industry, the ministry will develop and implement comprehensive policies on the reuse and recycling of all beverage containers by the spring of 1992.

In early 1991 Cabinet approved an expanded deposit/refund system for all beverage containers other than milk and pure juices with a minimum deposit of \$0.10.

The system includes input from an industry Working Committee whose mandate is to make recommendations on a cost effective, industry-operated depot return system.

Recommendation to Cabinet on the design of the new container system, including the content of supporting regulation to replace the existing Litter Act, is expected to take place in the fall of 1991.

g) Development and Implementation of a Comprehensive Biomedical Waste System

A comprehensive provincial biomedical waste system, including a provincial treatment facility, will be established in cooperation with the regional districts and hospitals, by the spring of 1993.

The Municipal Solid & Biomedical Waste Branch is currently involved with the Biomedical Waste System Planning Committee whose mandate is to establish a province-wide Biomedical Waste Management System by spring, 1993. The system will be constructed and operated by a private sector proponent selected through a Request For Proposal (RFP) process. The system will serve, on a priority basis and at a common unit cost, the biomedical waste requirements of publicly-funded health care facilities in British Columbia, primarily the hospitals.

h) Regulation of Incinerators

Provincial emission criteria for biomedical waste incinerators have been developed and were approved in June, 1991. The criteria are currently being distributed to ministry staff and interested parties. These criteria apply to all new incinerators designed and installed to burn biomedical waste. These objectives are to be met no later than fall 1993.

2. Other MSBW Branch Programs

Other MSBW Branch programs, not identified in Environment 2001 include the following:

a) White Goods Collection Program

A program is being developed to assist with the collection and recycling of white goods such as stoves, refrigerators, washers, dryers and hot water tanks from all areas of the province. The MSBW program will complement the B.C. Hydro "Power Smart" refrigerator program.

b) Other Action In Progress

- A guide for local governments to undertake composition analysis of their solid waste stream will be distributed in the fall of 1991.
- A review of landfill objectives is complete and new landfill criteria are being prepared and will be released this winter.
- Reports presenting options for rural waste management strategies and means to estimate solid waste quantities in the absence of weigh scales have been prepared for rural governments and are currently available.

VI. NO TIME LIKE THE PRESENT

British Columbia is ready to meet the environmental challenge. At no time in the past have we been as well equipped with the knowledge of the environmental issues facing us, the financial commitment to respond effectively, and the will to work together in a partnership of responsibility. With public initiative and support for government leadership, now is the time to begin building a better environmental future for us all.

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